

New Castle-Rye 16127 Preliminary Design



New Castle-Rye Bridge
Public Information Meeting
May 4, 2017



Hoyle, Tanner
& Associates, Inc.

Welcome & Introductions

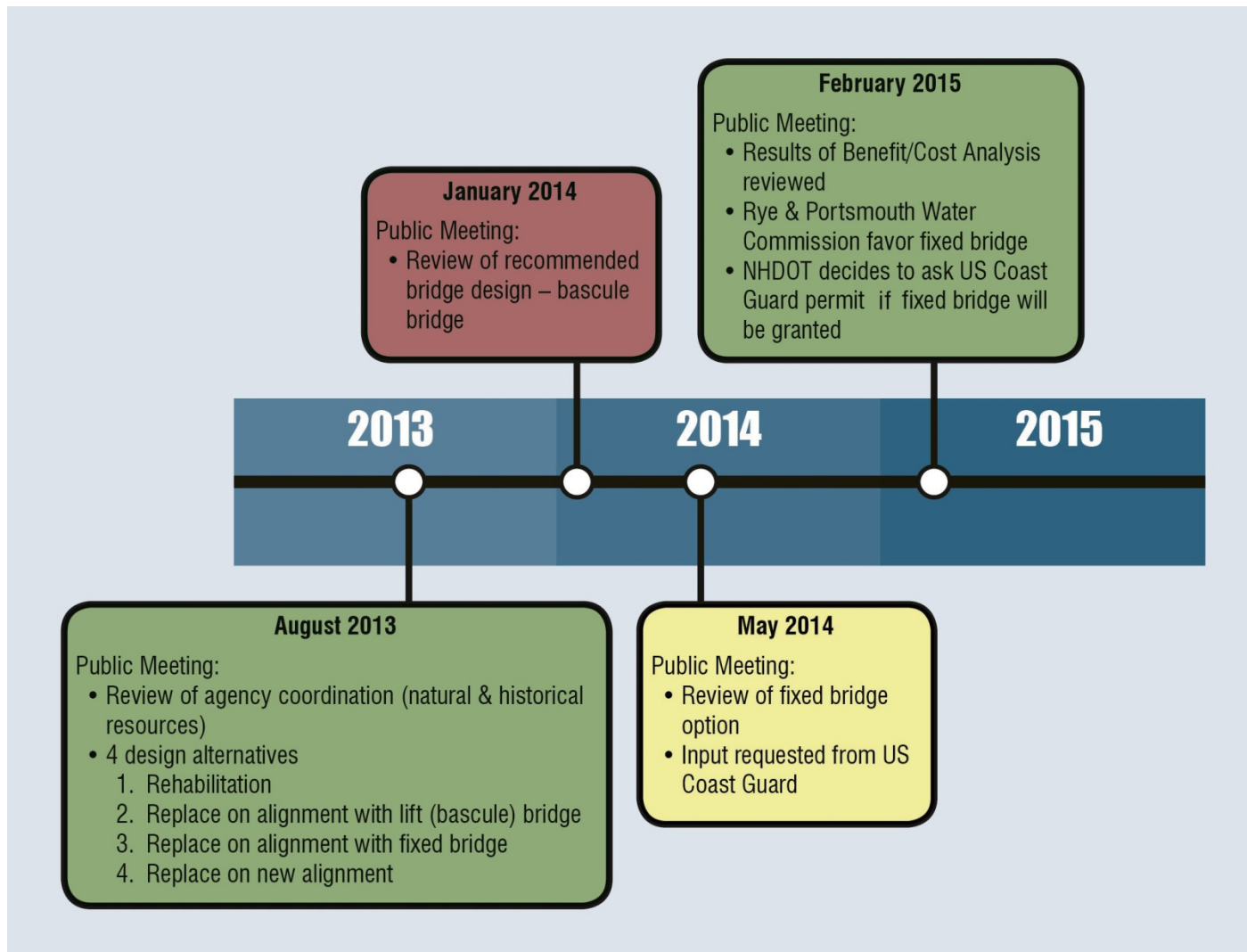
- Victoria Chase, P.E., NHDOT Project Manager
- Bob Landry, P.E., NHDOT Bridge Bureau Administrator
- James Murphy, P.E., HDR, Consultant Project Manager
- Stephanie Dyer-Carroll, FHI, Environmental Manager
- Jill Barrett, FHI, Public Outreach Coordinator
- Stephen Haas, Hoyle Tanner & Associates, Civil/Roadway Manager

Agenda

- Review project history
- Current status of project
- Next steps & schedule
- Public discussion



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Why Bridge Needs Replacement

- Bridge was not designed for modern truck loading
- Requirements for seismic activity are much greater
- Mechanical and electrical systems are obsolete
- Extensive maintenance and repairs have been performed over last 30 years
- Continued deterioration of bridge further reduces its capacity



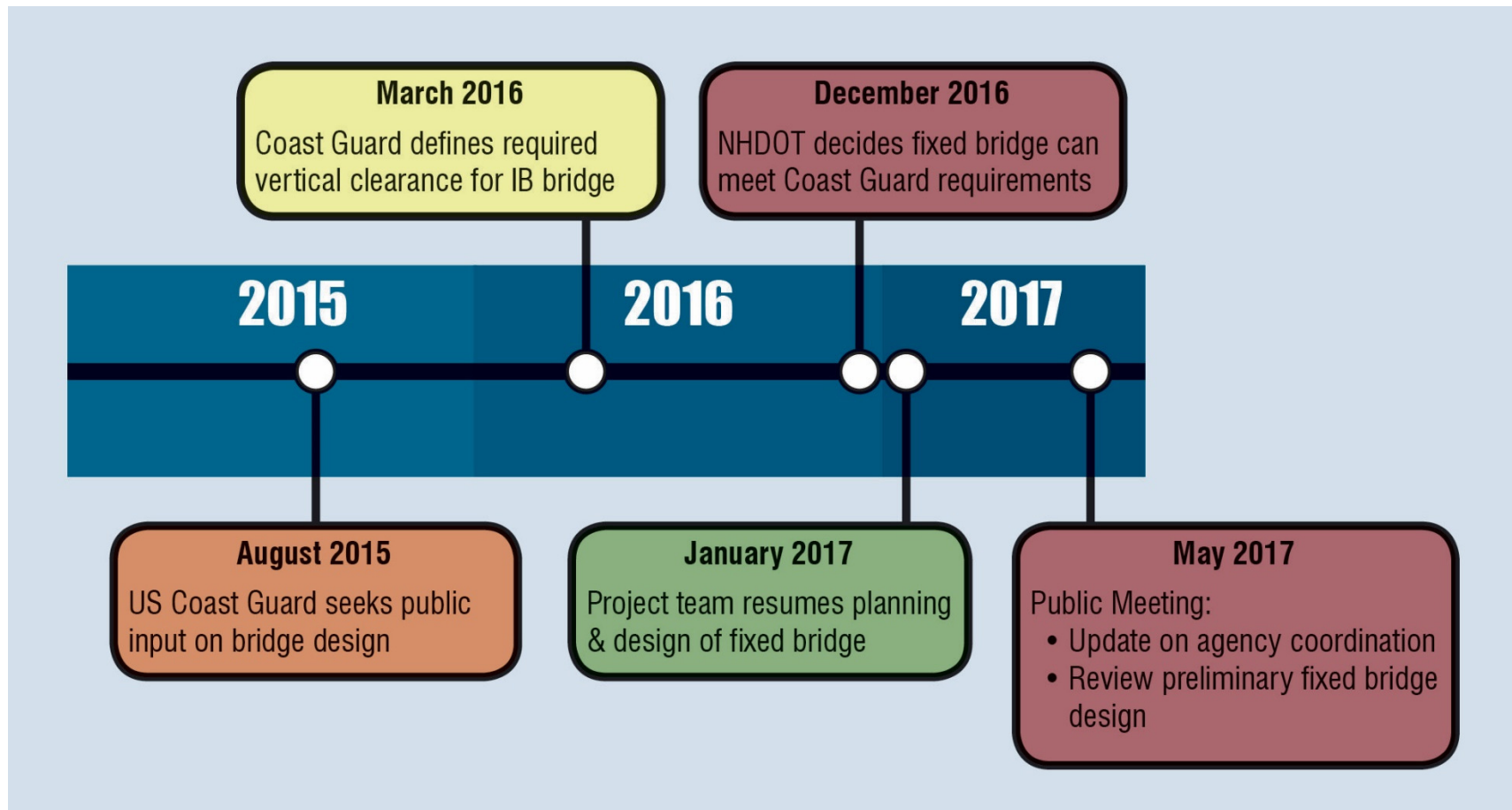
Additional Study of Replacement Alternatives

- Bascule bridge recommended early 2014, but...
- NHDOT was asked to reconsider a Fixed Bridge by:
 - Town of Rye Board of Selectmen
 - Portsmouth Department of Public Works
- A Benefit-Cost Analysis conducted in mid/late 2014

Benefit-Cost Analysis

- Studies Benefits and Costs
 - Replacement with Bascule Bridge
 - Replacement with Fixed Bridge
- Benefits
 - Quantitative – vehicular delays, real estate values, dredging costs, water line
 - Qualitative – livability improvements, commercial and recreational marine use, safe harbor
- Costs
 - Life cycle costs of fixed structure found to be \$9.9 million less in 2014 dollars (\$13.7 million in constant dollars)
- **Replacement with Fixed Bridge recommended**

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USCG Review of Fixed Bridge

- 4-span fixed bridge design submitted to USCG for initial review
 - Design Plans
 - Navigational Survey Information
- August/September 2015 – USCG seeks public comment for users of navigational channel
- March 2016 – Coast Guard sends letter to NHDOT stating that
 - 16.52' of clearance will be required for fixed bridge (~2.5' increase in clearance from 4-span replacement design)
 - A bridge that maintains 65' of vertical clearance is optimal, but USCG “are unable to produce sufficient data to support it”
 - Submission of the USCG permit will be required for final approval

Preferred Alternative

- Summer/Fall 2016 – Feasibility of 2-span fixed bridge is reviewed in order to reduce number of piers to facilitate construction closure schedule
- 2-span fixed bridge is selected as preferred alternative
- Winter/Spring 2017 – Preliminary design of 2-span fixed bridge is completed

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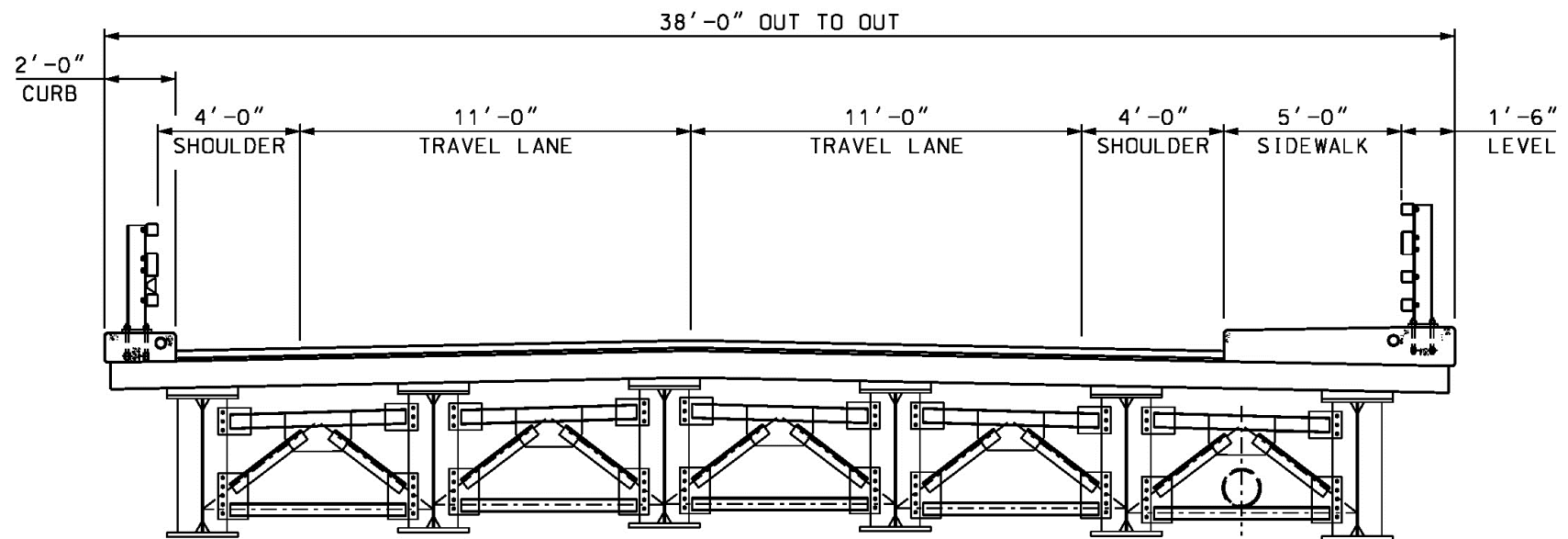
View from West



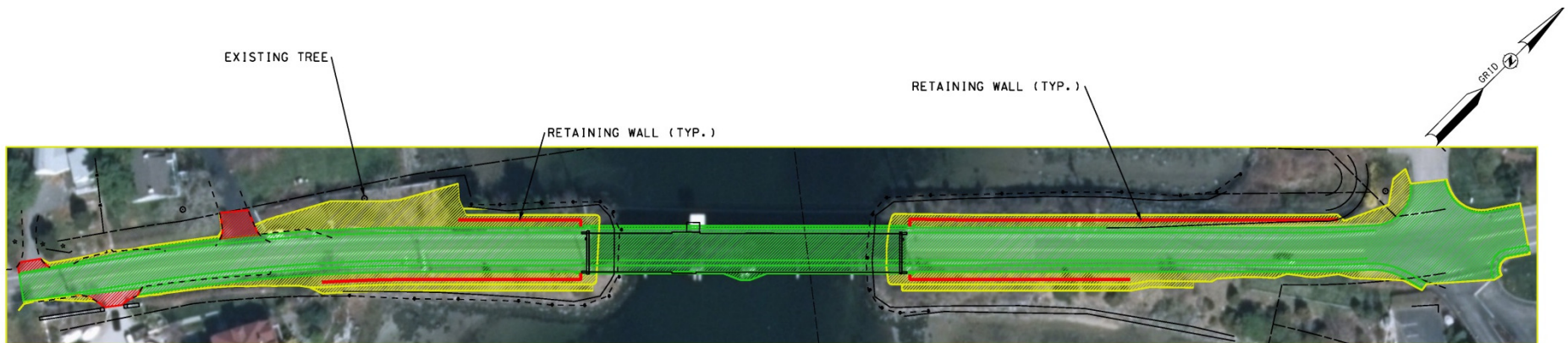
Two-Span Fixed Bridge

- Two-span structure reduces in-water work, with only one pier
- Piles will be either driven or pre-drilled
- Fender system size reduced
- Estimated capital cost of \$8 million




Bridge Cross Section



Approach Impacts



LEGEND

-  ROADWAY IMPACTS
-  GRADING IMPACTS
-  DRIVEWAY IMPACTS

Two-Span Fixed Bridge

- Provides roadway improvements similar to the 4-span fixed bridge alternative
 - Sidewalk moved to east side of bridge
 - Smooth riding surface
 - Shoulder widened to 4', sidewalk widened to 5'
- Provides scenic overlook at the pier
- Drainage swale in southwest quadrant being considered in design, may be utilized to treat water
- Approach walls have increased in height and length, but still sit behind existing rock causeways

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Aerial View



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View From Wentworth-Coolidge



Next Steps - Design

- Develop design and continue to identify risks
 - Targeting 3 month closure window – January – March
 - 1-way alternating traffic will be required in previous fall for construction access and in the following spring for paving
- Continue coordination with Stakeholders
 - Public Advisory Committee and Public Information Meetings – Fall 2017
 - Portsmouth Department of Public Works – water line
 - Other utility owners
 - Reviewing Agencies

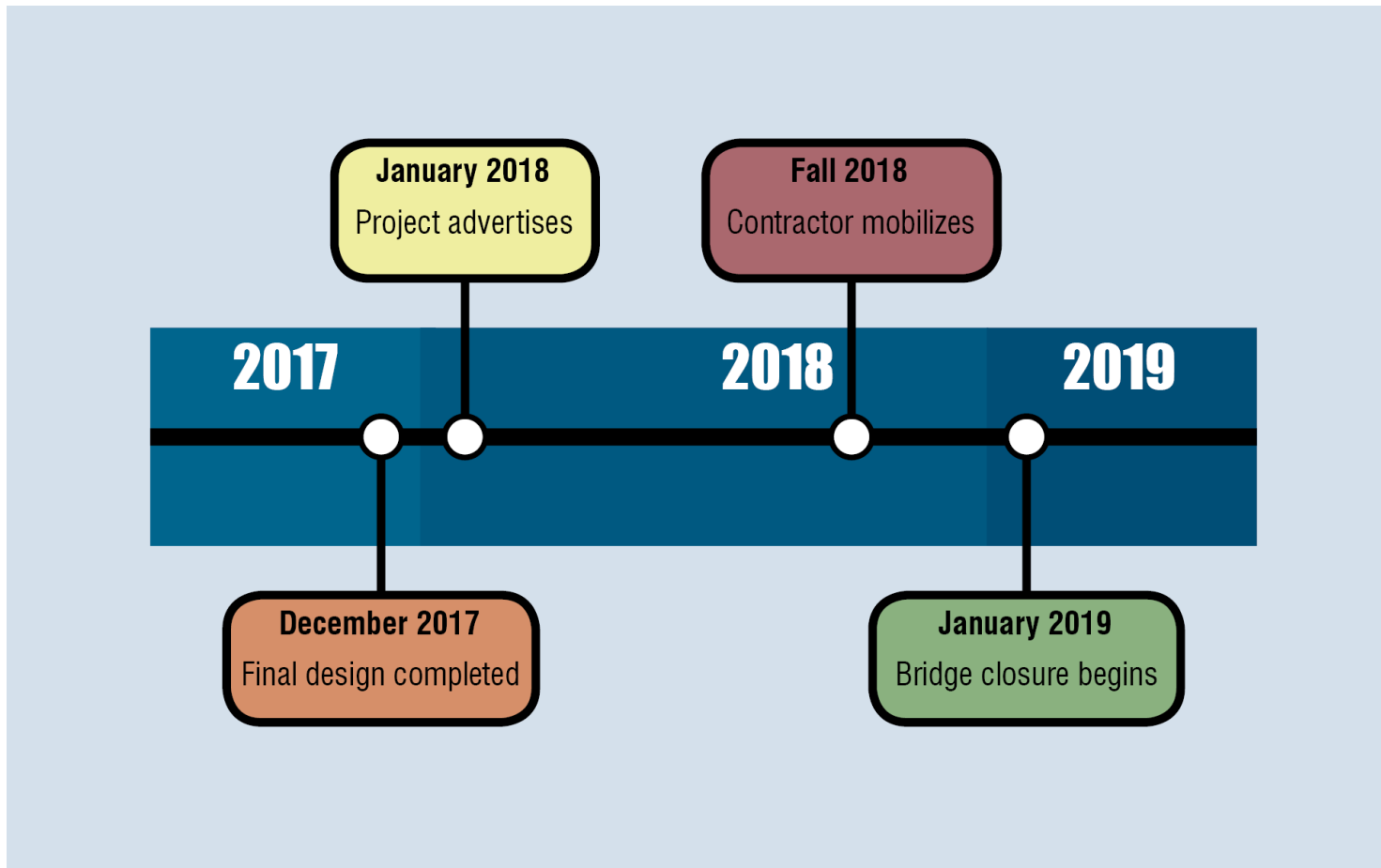
Next Steps - Historic Consultation

- Complete historic review process per Section 106
 - Submit Determination of Effect
 - Develop historic mitigation
 - Memorandum of Agreement
 - Will address 1994 Memorandum of Agreement, which agreed to preserve this bridge
 - Despite extensive maintenance efforts, DOT determined that bridge required replacement in 2014
 - We have consulted with the Advisory Council of Historic Preservation on moving forward with new agreement on this bridge.

Next Steps - Permitting

- Submit US Coast Guard Bridge Permit for 2-span fixed bridge – May/June 2017
- Environmental Assessment and Permits – Summer/Fall 2017
 - National Environmental Policy Act (NEPA) Environmental Assessment
 - Shoreland and Wetland
 - US Army Corp of Engineers 404/408 Permits
 - Essential Fish Habitat Assessment
 - Biological Assessment

Project Timeline



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Thank You



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